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IN THE ABSTRACT

In the ~~Disclosed~~ are a method and a device for detecting the phase of a moving object using a heterodyne interferometer. ~~A~~, a heterogeneous mode helium-neon laser is used ~~in the heterodyne interferometer~~ as a direct light source to increase a measuring speed, and a measuring resolution, ~~as well as minimizing~~ and minimize the loss of the light source. Signals, which have only a frequency difference between reference signals or measured signals and arbitrary signals, are extracted from signals which are obtained by multiplying the arbitrary frequency signals by the reference signals or ~~the measure~~ measured signals. After frequencies of the reference signals and ~~the measured~~ signals are converted, a phase difference of the extracted signals ~~is measured~~, and displacement of the moving object is measured. The ~~laser interferometer system of the present invention~~ includes a laser light source ~~part~~, an optical interferometer, a frequency converter, and a phase measurer. The light source ~~used in the heterodyne interferometer~~ uses output light, emitted from ~~a heterogeneous mode helium-neon~~ the laser generator, which is stabilized in frequency, and ~~such output light~~ has two frequencies which are at right angles to each other and linearly polarized.